

دو خط متوازی  
۲۰ آزمون!

الف)  $m = \frac{\Delta y}{\Delta x} = \frac{y - (-2)}{x - 5} = \frac{4}{-1} = -1$   $y = -x + 10 \rightarrow y = -14 + 10 = b = -4$  (۲)

$\Rightarrow y = -x + 11$  ✓

ب)  $2y + 4x = b \stackrel{15}{\Rightarrow} 4 + 2 \cdot 4 = b = 12 \Rightarrow 2y + 4x = 12$  ✓

ج)  $2 + 3x = 1 \Rightarrow -3x + y = b \stackrel{15}{\Rightarrow} -12 + 2 = b = -10 \Rightarrow -3x + y = -10$  ✓

د)  $m = \tan \frac{\pi}{4} = 1$   $y = \sqrt{2}x + b \Rightarrow 2 = \sqrt{2} \cdot 1 + b \Rightarrow b = 2 - \sqrt{2} \Rightarrow y = \sqrt{2}x + 2 - \sqrt{2}$  ✓

هـ)  $\sqrt{(2-2)^2 + (y-2)^2} = \sqrt{9+16} = 5 \Rightarrow y = 7$  ✓

و)  $3x + 4y = 20$   $\frac{|ax_0 + by_0 + c|}{\sqrt{a^2 + b^2}} = \frac{|9 + 12 - 20|}{\sqrt{9+16}} = \frac{1}{5} = \frac{1}{5}$  ✓

ز)  $\begin{cases} 2x + 3y = 4 \\ 2x + 4y = 9 \end{cases} \Rightarrow \begin{cases} 2x + 3y = \frac{4+y}{2} \\ 2x + 4y = 9 \end{cases} \Rightarrow 2x + 3y = 5$  ✓

ح)  $\begin{cases} 2x + 4y = 4 \\ 2x + 3y = 9 \end{cases} \Rightarrow \begin{cases} \frac{|9-4|}{\sqrt{4+9}} = \frac{5}{\sqrt{13}} \\ \frac{2}{\sqrt{13}} = \frac{\sqrt{13}}{13} \end{cases}$  ✓

ط)  $\frac{|2x - 2y - 1|}{\sqrt{2^2 + (-2)^2}} = \frac{|2x + 3y - 3|}{\sqrt{2^2 + 3^2}} \Rightarrow |2x - 2y - 1| = |2x + 3y - 3|$  ✓

$y = 2x + 5$   $\tan \alpha = \left| \frac{m - m'}{1 + mm'} \right| = \left| \frac{2 - (-1)}{1 - 2} \right| = 1 \Rightarrow \alpha = 45^\circ$  ✓

$AB = \sqrt{(\Delta x)^2 + (\Delta y)^2} = \sqrt{4^2 + 4^2} = 10$  ✓

ی)  $M \begin{vmatrix} \frac{2A+B}{2} = \frac{4-2}{2} = 1 \\ \frac{3A+B}{2} = \frac{6-2}{2} = 2 \end{vmatrix} \Rightarrow M \begin{vmatrix} -1 \\ 1 \end{vmatrix}$  ✓

$M \begin{vmatrix} \frac{2A+B+C}{3} = \frac{-10+2+3}{3} = -1 \\ \frac{3A+B+C}{3} = \frac{-12+2+1}{3} = -3 \end{vmatrix} \Rightarrow M \begin{vmatrix} -1 \\ -3 \end{vmatrix}$  ✓

(الف) ✓  
(۲)

$$b) \frac{1}{r} \begin{vmatrix} r & 1 & 1 \\ -r & r & 1 \\ -10 & -13 & 1 \end{vmatrix} = \frac{1}{r} |4 + (-10) + r^2 - (-r) - (-r^2)| = \frac{1}{r} r^2 \in \mathbb{R}$$

$$الف) -y = \frac{rx+1}{x-r} \Rightarrow y = \frac{rx+1}{r-x} \quad y \rightarrow -y$$

(r) 9

$$b) y = \frac{-rx+1}{-x-r} = \frac{rx-1}{x+r} \quad x \rightarrow -x$$

$$c) x = \frac{ry+1}{x-r} \Rightarrow y = \frac{rx+1}{x-r} \quad x \rightarrow ry, y \rightarrow x$$

$$d) -x = \frac{-ry+1}{-x-r} \Rightarrow x = \frac{-ry+1}{x+r} \Rightarrow y = \frac{-rx+1}{x+r} \quad x \rightarrow -y, y \rightarrow -x$$

$$ع) y' - r = \frac{r'x+1}{x'+r-r} = \frac{r'x+1}{x'-1} \quad x' = x-r \Rightarrow x = x'+r, y' = y+r \Rightarrow y = y'-r$$

(r)

$$\Rightarrow y' = \frac{r'x'+1}{x'-1} + r \Rightarrow y' = \frac{r'x'+r}{x'-1}$$

$$b) y' + r = \frac{r'x'+1}{x'+r-r} = \frac{r'x'+1}{x'}$$

$$x' = x-r \Rightarrow x = x'+r, y' = y-r \Rightarrow y = y'+r$$

$$y' = \frac{r'x'+1}{x'} - r \Rightarrow \frac{1}{x'}$$

$$الف) \begin{cases} rx+ry=1 \\ x-ay=1 \end{cases} \Rightarrow rx+ry=1 \Rightarrow 19y = -1 \Rightarrow y = -\frac{1}{19} \Rightarrow x = \frac{19}{19}$$

(r) 10

$$b) \begin{cases} rx+ry=1 \\ x-ay=1 \end{cases} \Rightarrow x = -\frac{r-(-10)}{-10-r} = \frac{19}{-19} = -\frac{19}{19} \quad y = \frac{r-r}{-10-r} = \frac{-1}{19}$$